areas, the electrode means being adapted to be connected to a means for supplying an electric current for imposing an electric potential in the strip between the electrodes.

2. (Amended) An apparatus as claimed in Claim 1, wherein the means for delimiting the rehydration area of the trough from the electrode area include walls extending laterally across the width of the trough and an air gap defined between each electrode means and the wall adjacent said electrode means.

3. (Amended) An apparatus as claimed in Claim 1, wherein two spaced apart parallel walls extend across the trough defining a gap there between.

4. (Amended) An apparatus as claimed in claim 3 wherein a part of the gel strip in the rehydration area of the trough adjacent the delimiting wall contacts a conducting/current carrying, electrode bridge.

5. An apparatus as claimed in claim 4 wherein the electrode bridges comprise an absorbent material wetted with an electrically conducting liquid.

6. An apparatus as claimed in claim 5 wherein the absorbent material is paper.

7. (Amended) An apparatus as claimed in Claim 1 wherein the electrode area is deeper than the rehydration area.

8. (Amended) An apparatus as claimed in Claim 1, wherein a laterally extending channel is defined in a floor of the trough.

9. (Amended) An apparatus as claimed in Claim 1, wherein the trough does not include embedded electrodes and the electrodes contact the electrode bridge material from above.

10. (Amended) An apparatus as claimed in Claim 1, wherein the tray includes a dry IPG gel strip and dry electrode bridge material located in place in the trough.

11. (Amended) An apparatus as claimed in Claim 1 further including pressure applying means which rest on the gel strip where the strip overlaps the electrode bridge material to ensure a good electrical contact between the gel strip and the electrode bridge material.

12. (Amended) An apparatus as claimed in Claim 1, wherein the tray defines a plurality of substantially parallel troughs.

14. (Amended) A method of rehydrating and performing electrophoresis on a gel strip comprising the steps of:

providing a tray defining at least one trough with a gel strip, located in said trough, the trough defining a centrally located rehydration area and an electrode area disposed on at least one side of the centrally located rehydration area in which an absorbent electrode bridge is provided, the trough including means for delimiting the rehydration area of the trough from the electrode area;

wetting the bridges with an electrically conducting liquid;

adding rehydration liquid, containing a sample to be separated by electrophoresis into the centrally located rehydration area of the trough;

inserting a dry gel strip into the trough if a gel strip is not already present in the trough, the gel strip being longer than the rehydration area so that its ends rest on the electrode bridges;

applying relatively low voltage across the gel strip during a first period in which rehydration of the gel strip occurs;

subsequently applying a relatively higher voltage to perform electrophoresis on the sample.

15. (Amended) The method of claim 14 wherein the sample is a mixture of macromolecules selected from the group consisting of protein samples containing DNA, RNA, amino acids or other components which can be separated by electrophoresis.

16. (New) An apparatus for performing electrophoresis on a gel strip comprising:

a tray defining a rehydration trough that receives rehydration fluid containing macromolecules and an electrode trough, wherein the rehydration trough and the electrode trough are separated from each other so as to inhibit the flow of rehydration fluid from the rehydration trough to the electrode trough;

a gel strip that is positioned within the rehydration trough;

an electrode assembly positioned within the electrode area wherein the electrode assembly provides current which is supplied to the gel strip wherein the electrode assembly is positioned within the electrode area of the trough such that contact of the macromolecules in the rehydration fluid and the electrode assembly is inhibited when the rehydration fluid is positioned within the rehydration trough.

17. (New) The apparatus of Claim 16, wherein a wall is interposed between the rehydration trough and the electrode trough of the tray.

18. (New) The apparatus of Claim 17, wherein the electrode assembly includes an electrode bridge material positioned within the electrode trough such that an air gap is interposed between the electrode bride material and the wall interposed between the rehydration trough and the electrode trough of the tray.

19. (New) The apparatus of Claim 18, wherein the gel strip is positioned within the rehydration trough such that a portion of the gel strip extends to contact the electrode assembly adjacent the electrode bridge material.

20. (New) The apparatus of Claim 19, wherein the electrode assembly further includes an electrode that contacts the electrode bridge material from a position above the electrode bridge material and the floor of the electrode trough.

21. (New) The apparatus of Claim 20, wherein the gel strip comprises a dry gel strip that is hydrated by the rehydration fluid and the electrode bridge material initially comprises a dry electrode bridge material that must be hydrated.

22. (New) The apparatus of Claim 17, wherein the floor of the rehydration trough includes a laterally extending channel positioned therein.

23. (New) The apparatus of Claim 22, wherein the floor of the rehydration trough is flat and includes sloped ends which slope upwards towards the wall interposed between the rehydration trough and the electrode trough.

24. (New) The apparatus of Claim 22, wherein the floor of the rehydration channel is curved along the base of its length.